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## NEW AGAVES FROM SOUTHWESTERN UNITED STATES<sup>1</sup>

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Two specimens of *Agave* were submitted recently to the Missouri Botanical Garden by Mr. W. I. Beecroft of Escondido, California, for identification. These plants had been collected at an altitude of 4000–5000 ft. in the mountains of southwestern Nevada. They seem to accord with material in the herbarium which Dr. Engelmann had referred doubtfully to *Agave utahensis*, as a possible variety. A more careful examination shows that they differ from that species, of which the type material is in the Garden Herbarium, in several important details.

In the comprehensive studies of the Agaves of the United States by Miss A. Isabel Mulford under the careful direction of Dr. Wm. Trelease, the material studied by Dr. Engelmann was merged, possibly because of its fragmentary nature, with *Agave utahensis*. A critical comparison of these fragments and the specimens from southwestern Nevada with the type of *A. utahensis* shows the following striking differences:

<sup>1</sup> Issued December 30, 1929.

*A. utahensis*

Leaves strongly inrolled in the terminal portion  
 Terminal spine stoutish, deeply grooved, 2.5 cm. or less long  
 Perianth-tube very slender, 4–5 mm. long  
 Perianth-segments 10–12 mm. long

*A. utahensis* var. *nevadensis*

Leaves not strongly inrolled in the terminal portion  
 Terminal spine slender, flat or shallowly grooved on the upper surface, 5 cm. or more long  
 Perianth-tube stoutish, 1–2 mm. long  
 Perianth-segments 8–10 mm. long

These differences warrant the recognition of this plant at least as a distinct variety which is characterized as follows:

*Agave utahensis* Engelm. in Watson, Bot. King. Exp. 497. 1871.

Var. *nevadensis* Engelm.<sup>1</sup> in herb.

Plate 32.

Stem short, thick, 3–4.5 cm. in diameter; leaves lance-attenuate, 1–2.5 dm. long, 2 cm. or less broad, dilated at base (3–5 cm.), glaucous and minutely scurfy on both surfaces; terminal spine slender, linear-attenuate, grayish, pungent, 3–6 cm. long; marginal prickles 2–4 cm. apart, flattened, grayish white, friable, mostly recurved, surrounded at the base, as in the case of the terminal spine, by a narrow dark brownish area; leaf-margins herbaceous, sinuate, becoming minutely serrulate on the upper portion of the dilated base; flowers about 2.5 cm. long, ovary 10 mm. or less long, perianth-tube stoutish, 1–2 mm. long, perianth-segments 8–10 mm. long.—California: Ivanpah, Mohave Desert, May, 1882, *S. B. & W. F. Parish 414* (Mo. Bot. Gard. Herb.), TYPE. Specimens from southwestern Nevada sent recently to the Missouri Botanical Garden by Mr. W. I. Beecroft for identification appear to belong to this variety.

Specimens in the Missouri Botanical Garden Herbarium from St. George, Utah, collected by Dr. Edward Palmer in 1877, were

<sup>1</sup> *Agave utahensis* Engelm. var. *nevadensis* Engelm. in herb. Perennis; caulibus brevibus, crassibus, 3–4.5 cm. diametro; foliis lanceo-attenuatis, 1–2.5 dm. longis, 2 cm. vel minus latis ad basin (3–5 cm.) dilatatis, utrinque glaucis et minutissime porriginosis; spina terminali tenui, lineari-attenuata, cinerea, 3–6 cm. longa; aculeis complanatis, cinero-albidis, friabilis, plerumque recurvatis, circa basin ferrugineis, 2–4 cm. remotis; marginibus foliorum ad basin dilatatis, integris vel serrulatis; floribus ca. 2.5 cm. longibus; ovario 10 mm. vel minus longo; tubo perianthii 1–2 mm. longo; lobis perianthii 8–10 mm. longis.—California: Ivanpah, Mohave Desert, May, 1882, *S. B. & W. F. Parish 414* (Mo. Bot. Gard. Herb.), TYPE.

mentioned by Miss A. Isabel Mulford<sup>1</sup> as a thick-leaved form of *Agave utahensis* Engelm. and were designated by Dr. William Trelease as "*A. utahensis* var. *nevadensis*." However, the plant which Dr. Engelmann characterized and recorded in his unpublished notes as *Agave utahensis* var. *nevadensis* was collected by S. B. and W. F. Parish at Ivanpah, Mohave Desert, in May, 1882. A further study of the Palmer plant in the light of additional material shows that it is not only specifically distinct from *A. utahensis* and its variety *nevadensis*, but apparently represents an undescribed species belonging to the section *Geminiflorae*. The following description records the outstanding characters of the species:

*Agave scaphoidea*<sup>2</sup> Greenman & Roush, n. sp. Leaves linear-lanceolate, thick and rigid, openly concave, 12–35 cm. long, 1.5–3.5 cm. broad, slightly narrowed toward the base, minutely roughened on the surface, gradually attenuate above the middle; terminal spine stout, reddish-brown, pungent, 4 cm. long, openly grooved for about one-half its length and decurrent along the leaf-margin for nearly or quite 4 cm.; marginal prickles short-triangular, slightly curved, reddish-brown, papillate, about 3 cm. apart on the otherwise straight and herbaceous leaf-margins; inflorescence spicate; flowers in pairs, 3–3.5 cm. long; ovary 10–12 mm. long; tube of the perianth 6–8 mm. long, slender; perianth-segments oblong, 15–17 mm. long, obtusish; mature fruit not seen.—Utah: St. George, May, 1877, *Ed. Palmer* (Mo. Bot. Gard. Herb. Nos. 124604 TYPE, 124605, 124606, 124607 in part).

This species has been confused hitherto with *A. utahensis* of

<sup>1</sup> Mulford, A. Isabel. Agaves of the United States. Rept. Mo. Bot. Gard. 7: 78. 1896.

<sup>2</sup> *Agave scaphoidea* Greenman & Roush, n. sp. Folia lineari-lanceolata, crassa et rigida, aperte concava, 12–35 cm. longa, 1.5–3.5 cm. lata, versus basin paulo angustata, utrinque minutissime aspera, supra mediam gradatim attenuata; spina terminali rigida, ferruginea, 4 cm. longa, plus minusve canaliculata, ad marginem folii decurrenti; aculeis brevi-triangularis, paululo curvatis, ferrugineis, papillosis, circiter 3 cm. remotis; inflorescentia spicata; floribus binis, 3–3.5 cm. longis; ovario 10–12 mm. longo; tubo perianthii 6–8 mm. longo, tenui; lobis perianthii oblongis, 15–17 mm. longis, obtusis; capsula ignota.—Utah: St. George, coll. of May, 1877, *Ed. Palmer* (Mo. Bot. Gard. Herb. Nos. 124604 TYPE, 124605, 124606, 124607 in part).

Engelm. from which, however, it is clearly distinct as shown by the following tabulated characters:

<i>Agave utahensis</i>	<i>Agave scaphoidea</i>
Leaf-margins sinuate	Leaf-margins straight
Prickles approximate, gray, friable	Prickles remote, reddish, papil- late, rigid
Terminal spine slender, 2 cm. long, grayish, involute for practically its entire length	Terminal spine stout, 4 cm. long, reddish-brown, openly grooved for about one-half its length
Perianth-segments 10-12 mm. long, tube of the perianth 4-5 mm. long	Perianth-segments 15-17 mm. long, tube of the perianth 6-8 mm. long

### EXPLANATION OF PLATE

#### PLATE 32

*Agave utahensis* Engelm. var. *nevadensis* Engelm. in herb.  
Nevada.

From a living plant collected by Mr. G. E. Barrett  
in southwestern Nevada.